

## Liz Howarth: An abductive analogy principle

Within the framework of Pure Inductive Logic, we formulate a principle of analogy based on ‘abductive reasoning’ as described by C.S. Peirce<sup>1 2</sup>, and investigate which families of probability functions satisfy this Abductive Inference Principle, AIP. We give a classification for AIP in the presence of Spectrum Exchangeability (equivalent to Atom Exchangeability for unary languages) which hints that AIP may be less desirable than it might appear, and show that if Language Invariance is additionally required, there is a unique (but rather objectionable) solution.

An overview of recent results concerning several different formulations of analogical inference principles, one of which includes AIP as a special case, will also be given.

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<sup>1</sup>Peirce, C.S., A Theory of Probable Inference, in *Studies in Logic*, ed. C.S.Peirce, John Benjamins Publishing Company, Amsterdam/Philadelphia,1883

<sup>2</sup>Peirce, C.S. *Collected Works, Volume V*, eds. Charles Hartshorne and Paul Weiss, Harvard University Press, Cambridge, MA., 1934